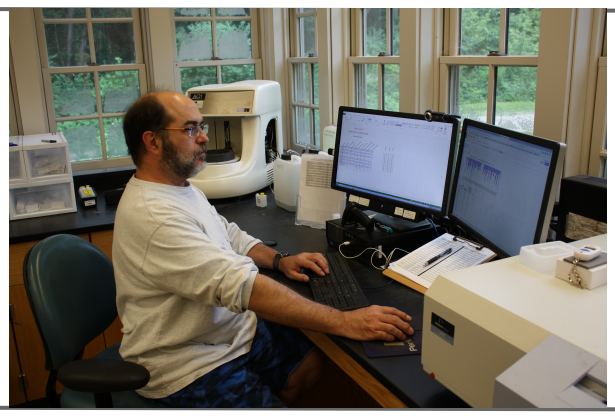
Analyzing Water Quality



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Part I: Overview of Business

Lakeside Lab was established in 1909 as an education and research facility. Currently, the lab is affiliated with the University of Iowa, Iowa State University, the University of Northern Iowa, and the State Hygiene Lab. Volunteers (CLAMP) assist research through the collection and processing of water samples from the Iowa Great Lakes and surrounding environs.

Part II: Job Specifics

My roles included:

- Assisted CLAMP volunteers with sample collection.
- Organized and anayzed spreadsheet data to note trends in water quality parameters.
- Produced training videos.
- Assisted with supervision of visiting children and creating educational materials.

Part III: Introduce the Problem

How can lake water quality data be analyzed to inform decisions that are made regarding water quality?

Part IV: Background

An essential tool, that can be used by my students, for data analysis is the spreadsheet. My students benefit from the integration of spreadsheets into many class investigations. The CLAMP data sets and GLEON buoy data sets are available online. We will plot various types of graphs, create trend lines, make judgements regarding slope math, and learn more about water quality parameters and how they may or may not correlate. This leads into discussions on correlation vs. causation.

Part V: Business Solution

Water quality data is available for academic, governmental, and public entities. Any mitigation efforts, in cases of poor water quality, can use the lab's monitoring system in the shaping of policy.

Part VI: Student Solutions

My students will analyze lake data sets and make recommendations based on empirical data. This authentic research may lead to suggestions regarding agricultural practices, city planning, water districts, or recreation.